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ABSTRACT

This research project investigates the application of principles derived from a conflict theory of decision making (Janis & Mann 1968) to the study of decision making among high school and college students. Three studies were carried out to test derivations from conflict theory. The first study tested the effectiveness of a balance sheet or tallying procedure used to induce a sample of high school students to think carefully about considerations relevant to college choice. The second study dealt with a commitment warning procedure designed to inhibit the tendency to use superficial and past decision making in everyday decisions. The third study was concerned with the conflict theory hypothesis that preferences for supportive and utilitarian information are related to the stage of the decision process at which the student is located. Results of the three studies tend to support the derivations from the conflict theory, but in addition to their theoretical significance, may be of value to counselors and teachers who are concerned with developing sound principles of decision making in their students. (Author/WS)

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Final Report

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STUDIES IN CURRICULUM DECISION MAKING: A CONFLICT THEORY APPROACH

September, 1971

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Summary

The aim of the research project was to investigate the application of principles derived from a conflict theory of decision making (Janis & Mann, 1968) to the study of decision making among high school and college students. Three studies were carried out in order to test derivations from conflict theory.

Study I tested the effectiveness of a balance sheet or tallying procedure used to induce a sample of high school students to think carefully about all considerations relevant to their choice of college. In support of the experimental hypothesis, students exposed to the balance sheet procedure three months before their decision showed on a number of measures taken six weeks after that decision, greater decisional stability than a control group. In comparison with control subjects, students administered the balance sheet procedure (1) expressed less post decisional regret and reported less concern about their choice following the decision, (2) selected a wider array of alternatives in formulating the decision, (3) took into account more self-related considerations and fewer social considerations, and (4) were less interested in receiving supportive, dissonance reducing information. On the basis of spontaneous comments made by students exposed to the procedure, these effects appear to have been mediated by: (1) increased salience of the importance of the decision, (2) predecisional clarification of the relative merits of the choice alternatives, (3) stimulation of a search for feasible alternatives, (4) increased awareness of new, relevant considerations, and (5) learning a technique for systematically comparing and weighing choice alternatives. It was recommended that further tests of the technique be carried out to investigate its effectiveness when administered by guidance counsellors in individual sessions and teachers in class sessions.

Study 2 dealt with a commitment warning procedure designed to inhibit the tendency to use superficial and hasty decision making in everyday decisions. It was predicted, in line with conflict theory, that when college students are warned that their choice of an item is to be considered binding and irrevocable they will show more cautious decision making. Seventy-nine college students who participated in a study of art preferences were offered a choice between two art prints to keep as a reward. The severity of the commitment warning was varied by giving different sets of instructions to different groups of subjects. In the choice revocable group, subjects were told they would be able to change their minds if they wished to, and return to exchange the print. In the choice irrevocable group, subjects learned that they would have to sign for the print and would be unable to change their minds. In a third experimental group, subjects not only learned that they would have to sign for the print and that they would be unable to change their minds, but also were told they would be required to write an essay justifying their choice. Consistent with the experimental prediction, time taken to arrive at a decision was strongly affected by the degree of commitment implied in the warning. Decision time was relatively short in the

group with the revocable choice, was twice as long in the choice irrevocable group, and more than tripled among subjects required to justify their choice after an irrevocable decision. In addition, the most highly committed group showed less tendency to predecisionally "bolster" the alternatives than the other two groups, indicating that here too the commitment warning initiated a psychological set to approach the decision problem carefully and objectively.

Study 3 was concerned with the conflict theory hypothesis that preferences for supportive and utilitarian information are related to the stage of the decision process at which the student is currently located. A sample of high school seniors faced with a choice between colleges was offered information files relevant to their preferred and less-preferred alternatives at three time periods during the decision process: (1) one month before the decision; (2) one week after the decision; and (3) six weeks after the decision. The overall pattern of information preferences across stages (with the exception of the second time period) supported the hypothesis that in the predecision phase, students are equally receptive to positive and negative facts about the leading choice alternatives; but in the post decision phase, students are selectively interested in supportive, dissonance-reducing information. There was also a differential receptivity to utilitarian information at each of the three time periods. In general, interest in a class of information varied as a function of its relevance and usefulness for solving problems related to different stages of the decision process.

Results of the three studies tend to support the derivations from conflict theory, but in addition to their theoretical significance, may be of value to counselors and teachers concerned with developing sound principles of decision making in their students. Study I reveals that the balance sheet procedure is a promising technique for inducing students to think carefully about relevant considerations prior to making a choice. Study 2 shows that at least for everyday decisions, the announcement of a commitment warning serves to slow down the decision process and inhibits the tendency to appraise alternatives superficially and subjectively before arriving at a decision. Finally, Study 3 provides preliminary evidence that in order for information to be effective it must be appropriate to the specific needs and problems of the particular stage in the decision process at which the student is located.

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Study I. The "balance-sheet" procedure and stability of decisions about college.

1. Introduction

One of the major principles of conflict theory (Janis & Mann, 1968) is that stable decision making is a function of the extent to which the individual has mulled over all the relevant considerations before making up his mind. The student, who in coming to a choice of college, neglects to think about a whole class of considerations - say, the quality of the faculty or the feelings of his parents - will be vulnerable to a great deal of criticism and regret after he announces his choice and again, after he implements it.

Often, in decisions about college, a choice is based on only one or two types of consideration, namely utilitarian gains for the self (eg. the pleasant social and physical environment at Podunk U., the intellectual calibre of its faculty, the easy availability of scholarships, etc.). But because there are gaps in the student's thinking - for example, friend's opinions in the matter, parental advice, costs to other members of the family - any post decisional criticism from his social network, because it is unexpected and has not been taken into account, will make for an unstable decision. Similarly, if only social considerations are thought about - as sometimes happens when a student chooses a college because of a family tradition - any adverse feedback about utilitarian considerations, for example, the discovery of tough school requirements, the distance from home and friends, will jeopardize the success of the decision.

Conflict theory has assumed that sound, stable decision making involves careful scanning of all the relevant types of consideration that enter into a decisional "balance sheet." The basis of this assumption is that the process of recognizing and taking account of all the positive and negative consequences of a decision has an immunizing effect which enables the individual to live with his decision even if negative consequences occur (cf. Janis, 1968).

If it is true that the degree to which careful thought has been carried out about all the relevant considerations has an important influence on the stability of a decision, we can make the following prediction. Students who are put through an accounting or tallying procedure in which they are required to verbalize and list all the considerations relevant to their choice of college, (a) will be less likely to change their mind (express regret) after making their choice, and (b) will be more satisfied with their choice, than a group of students who are left to arrive at a choice in the usual manner.

2. Method

In this study, a group of 30 seniors, randomly selected from the college preparatory program at Medford High School , were put through an accounting (balance sheet) procedure three months before their decision about a college to attend after graduation. A control group of 20 seniors who were not administered the balance sheet procedure was set aside for

purposes of comparison on post tests after the decision.

The instrument consisted of a set of four tasks (see Appendix I):

1. First of all, the student was asked how far along he had progressed in his decision.

2. He was next asked to list the major contending alternatives for selection.

3. Then he was required to describe, spontaneously, positive and negative features of the two leading alternatives.

4. Finally, in the key part of the procedure, he was instructed how to fill out, systematically, a "balance sheet," a table with headings designating four classes of consideration representing thoughts and feelings about the two leading choice candidates:

   a) utilitarian gains and losses for self
   b) utilitarian gains and losses for others
   c) social approval and disapproval
   d) self-approval and disapproval

In this part of the procedure the student was also asked to rate each entry on a five-point scale, according to its importance as a consideration (see sample balance sheet in Table I).

Post measures: (a) A few minutes after administration of the balance sheet, interviews were conducted with subjects in the experimental group to ascertain immediate reactions to the procedure. Questions, which tapped responses to the procedure, included: "Has anything come up today that may be you hadn't considered before?" "Have you come to think about a slight change or modification in the alternatives you've considered?" "Have you thought of any new ways to plan your decision in order to make sure everything will turn out as well as possible?" (see Appendix I). (b) Four months after the experimental session in which the balance sheets were administered (approximately six weeks after the decision about college had been made) subjects in the experimental group and in a control group answered a post test of their plans for college (Appendix 2) in which they rated their level of post decisional regret and concern, filled out a balance sheet listing the considerations underlying their choice of college, and rank ordered their interest in eight files offering information about their chosen and non-chosen colleges.

Results

It was predicted that students who were put through the accounting or tallying procedure would be (a) more stable in adhering to their choice, and (b) more satisfied with their choice than a control group of students left to arrive at a decision about college without the benefit of the tallying procedure.

A. Immediate effects. On completion of the balance sheet, interviews were conducted with all 30 subjects in the experimental group, the questions designed to test whether the accounting procedure had produced any immediate changes in their way of looking at

TABLE I

Sample Balance Sheet
(showing entries made by a subject in the experimental group, and the scoring method)

	Alternative #1 Harvard	Importance Rating	Alternative #2 Yale	Importance Rating
Utilitarian gains for self	-choice of living at home or on campus -great Engineering Dept. -Harvard offers scholarship to enable students to live on campus -In Boston	(3) (5) (3) (2)	-great Engineering Dept. -Yale offers generous scholarship aid	(5) (3)
Utilitarian losses for self	-if I lived at home, my urge to do school work (I think) would be less	(-3)	-I would be compelled to live away	(-3)
Utilitarian gain for others	-if I should live at home my family would save money -I would be able to live with my family & friends	(3) (4)	-	
Utilitarian losses for others	-		-my family would be forced to pay more money for my education -I would not be able to return home that often	(-3) (-2)
Social approval	-most people consider it an honor to attend Harv. -it will enable anyone to attain high goals	(2) (2)	-It's an honor to be able to attend Yale -It will mean a lot to me when I get out of school	(2) (2)
Social disapproval	-		-	

(continued)

	Alternative #1 Harvard	Importance Rating	Alternative #2 Yale	Importance Rating
Self Approval	-prestigious university -reflects my ability for good work	(4) (5)	-prestigious university -reflects my ability for good work	(4) (5)
Self disapproval	-too academic	(-1)	-too academic	(-1)

Sum rated positive anticipations:	33	21
Sum rated negative anticipations:	-4	-9
Net (positive minus negative) :	29	13

Σ difference = 16

the college decision. To the question: "Has anything come up today that maybe you hadn't considered before (Item 8a), approximately 43% reported that the procedure had elicited some new thoughts.

The three most frequently mentioned effects of the procedure were:

1) Clarification of the relative attractiveness of the choice alternatives.
One senior became convinced that his preferred alternative was not significantly more attractive than the other available colleges: "I realized when I wrote down things (on the balance sheet) that there's not that much of an advantage to going to Tufts - in the end it would be almost the same as Boston College. A little more prestige in graduating from Tufts, but I would probably get the same education actually. I could be just as happy to go to B.C. as Tufts. When I look at them now they're almost on the same level."
Another senior, conflicted by her interest in both U. Mass and Leicester Jr. College, asserted that "the sheet pointed out to me what things are most important in making my decision. Previously I was really confused about everything - it made me think about things and clarified them in my mind. By writing things down I can more easily see what I am thinking."
Others asserted that the balance sheet "made me think about learning more about each school;" "forced me to think definitely about the pros and cons (for the first time);" and "got me to think about several things a little bit more - like the differences in colleges."

2) Reminder of the importance of the decision.
Several subjects mentioned that the procedure acted as a kind of challenge impressing upon them the importance and urgency of the decision. One reported: "It brought me a step further ahead by getting me to talk about it and think about it a bit more." Another: "It makes me realize it is upon me; I never realized all that went into making a decision." A third became preoccupied with the momentous nature of the choice: "U. Mass is more important to me now; even school itself is more important."

3) Stimulates search for alternatives.
As we mentioned earlier, the procedure requires the respondent to make a comparison between at least two alternatives. Students who had satisfied themselves with applying to only one school became aware that they had unwisely limited their options, and some of these subjects were stimulated to seek out new alternatives. A female student reported: "From the questioning I realized that maybe I should have applied to more places and maybe I will." Another girl, who had not yet applied to any colleges, reported "It seemed that I had more plans for the future but I guess I don't....I'll have to start looking."

These are the three major categories of response, revealing that at least immediately after its administration the procedure helped clarify the relative merits of the choice alternatives, reinforced the significance of the decision, and stimulated a search for new alternatives among a sizable number of subjects. The majority of subjects, however (57%) reported that the balance sheet procedure had little or no effect, in most cases explaining that they had already made a careful study of the alternatives. Of course, the student who has already applied to eight schools, sent for and read all their catalogues, spoken to his guidance counsellor, discussed matters with his family, and thought about the problem for a long time, is not likely to gain a great deal from the procedure. Many of the students who reported no effect from the balance sheet procedure were of this type.

4) Salience of new considerations.
Approximately 27% of the experimental group agreed that they had come to think about changes in the alternatives under consideration (Item 8b) as a result of undergoing the balance sheet procedure. Modifications in the alternatives frequently followed from a realization that key considerations had been overlooked or virtually ignored. Some examples: "I thought more about each school and separated each school more in terms of myself and my parents. (Until now) I hadn't really thought about the distance from home and living away from home;" "I hadn't really thought of what my friends or relatives would think, and I really should;" "I never thought of the bad things about either school before (now I will)."

5) Making the decision.
The balance sheet procedure also has some effect on the way in which respondents plan their decisions. 23% indicated they were now thinking of taking new steps to ensure a sound decision (Item 8c). One student said that he had been moved to look into the possibility of a formal tour of each of the schools; a female student, conflicted over whether to become a secretary or go to college, confided she was now seriously considering getting a part-time job as a secretary to see if she would like it; several students reported that they planned to use the technique of writing down all considerations and weighing them carefully as soon as they received acceptance letters from different colleges.

B. Long term effects.

1. Post decision conflict and regret.
Four months after the original experimental sessions and approximately six weeks after notifying the colleges of their decision, a sample of 24 of the 30 students who had participated in the tallying procedure and a control group of 20 students in the college preparatory class was administered a post test of their plans for college (see Appendix 2). On a 3-point scale, subjects rated the magnitude of regret or concern they had experienced over their choice of college. In comparison with the control group, the balance sheet group tended to express less

regret (1.22 versus 1.50, p=.12). Consistent with this finding, fewer students in the balance sheet group expressed feelings of regret (22%) than in the control group (40%) but this difference too falls short of statistical significance. (For a brief discussion entitled "Who are the regrettors?" see Appendix 3).

Students were also asked to indicate on a 5-point scale how much thought and concern they had undergone during the month after their decision. Subjects in the balance sheet group reported less concern ($\bar{x}$ =3.38) than control subjects ($\bar{x}$ =3.79). This difference approaches significance at the .10 level. The difference in concern experienced by the two groups is paralleled in the percentage of subjects who reported feeling some concern in the month following the decision; 46% of the balance sheet group, but 68% of the control group reported post decisional concern (p=.12).

2. Range of alternatives.

One effect of the balance sheet procedure is that it apparently challenges the student to formulate his decision over a wider range of alternatives (see discussion above). While all but one of the experimental group subjects reported post decisionally that they had selected between two or more schools (96%), only 79% in the control group reported selecting between two alternatives (p=.14).

3. Considerations taken into account.

As part of the long term follow up, students in both the experimental and control groups were required to fill out a balance sheet listing the considerations underlying their choice of college. Table 2 shows the number of positive and negative considerations entered for the two leading alternatives (chosen and unchosen) according to one of four categories utilitarian self; utilitarian others; social; and self.

A major methodological concern in comparing post decision balance sheets produced by the two groups, is that the experimental group, having had prior experience with the task, might be more adept at thinking up considerations, and this artifact rather than any real psychological change may be responsible for differences between the two groups. Analysis of the data reveal that the two groups did not differ in the number of subjects reporting difficulty in filling out the sheets. The fact that the total number of considerations entered by the two groups was highly similar also undermines the notion that the experimental group's performance on the post decisional balance sheet is a mere reflection of practice effects.

From Table 2 the following pattern of differences emerges: The balance sheet group (n=19) took into account a greater number of self considerations of all kinds than the control group (n=12); but also bothered with fewer social considerations. Indeed, in an analysis of variance the interaction between group and focus of consideration was significant ($p < .05$). We might speculate that the experimental group's heightened focus on self-considerations reflects their lowered concern for what others think after they have made their choice.

TABLE 2

Mean number of considerations listed in postdecisional balance sheet for chosen and unchosen colleges (positive and negative considerations combined)

	Category of Considerations				
	Utilitarian Self	Utilitarian Others	Social	Self	Total
Experimental group (balance sheet administered predecisionally) (N = 19)	9.63	4.05	3.63	3.68	21.00
Control group (no balance sheet predecisionally) (N = 12)	8.50	4.42	3.75	3.17	19.83

4. Preferences for supportive information.

In general on the long term followup, there were few differences between subjects in the two groups in level of interest for files offering information about the student body, faculty, academic pressures, and so on. However, on the two files which offered subjects an opportunity to bolster their choice - positive and negative comments about the colleges by students presently enrolled, - differences emerged between the two groups (See Table 3).

While both groups, understandably, were more interested in supportive than in nonsupportive information, control subjects were more interested in supportive information and were less interested in nonsupportive information than balance sheet subjects. Net interest in supportive over nonsupportive information (positive comments minus negative comments) was significantly greater in the control group ($\bar{x} = 1.88$) than in the balance sheet group ($\bar{x} = 1.16$, $p < .05$). This difference was due primarily to the greater interest in supportive, positive information among control subjects. We may surmise that subjects exposed to the accounting procedure felt more secure with their choice and therefore felt less need to have their decision bolstered by supportive dissonance-reducing information (cf. Festinger, 1957).

4. Summary and Conclusions

In line with the experimental hypothesis, students exposed to a balance sheet accounting procedure, showed, on a number of indices greater decisional stability than a control group. Balance sheet subjects, in comparison with control subjects (1) expressed less post-decisional regret and reported less concern about their choice in the month following their decision, (2) formulated the decision with a wider array of choice alternatives, (3) took into account a greater number of self-related considerations and a smaller number of social considerations, and (4) showed less interest in reading supportive, dissonance-reducing information. Going on comments made by students exposed to the procedure, these effects may have been mediated by: (1) increased salience of the importance of the decision, (2) pre-decisional clarification of the relative merits of the alternatives, and (3) stimulation of a search for viable alternatives. In addition, the procedure seems to have made salient new relevant considerations easily overlooked in formulating the decision, and provided for some students, a technique for systematically weighing up the alternatives.

It seems likely that the accounting activity involved in constructing a personal balance sheet induced students to become more deliberate and "rational" in their decision making. However, in this study, the dynamic underlying the effects of the balance sheet procedure was not under investigation, but rather its effectiveness.

TABLE 3

Preferences for supportive and nonsupportive information about chosen alternative on followup test administered 6 weeks after decision about college.

	Level of interest in positive comments (1)	Level of interest in negative comments (2)	Net interest in supportive information (1-2)
Experimental group (balance sheet administered predecisionally) (N = 24)	5.87	4.71	1.16
Control group (no balance sheet predecisionally) (N = 17)	6.44	4.56	1.88
	12.31	9.27	

It seems safe to conclude on the basis of this preliminary study carried out with high school students on a decision about college that the balance sheet procedure could be a promising instrument for promoting sound, stable decision making. It should now be tested on a larger sample of students in a variety of decision situations, with followups extending into the period after the student has actually started college. Some minor modifications in the procedure would allow it to be administered by guidance counselors in individual sessions as well as class teachers in group sessions, with good possibilities of success.

Study 2. A commitment warning procedure for combatting superficial decision making.

1. Introduction

If a decision maker believes that it will be easy to undo a decision either because social constraints against reversal are non-existent, or because he has no personal objection to changing his mind, he will become less vigilant about risks that could result in post-decisional regret.

According to conflict theory, the tendency to appraise alternatives in a superficial and biased, rather than objective way will be affected by forewarnings about the extent to which the choice will be binding. Thus, when a conflicted decision maker believes that his choice will not be final or binding, that it will be possible to reverse the decision at no great cost, he is more likely than ever to make a hasty and superficial appraisal of the alternatives. On the other hand, when he is led to believe that he will be committed irrevocably to the chosen alternative, he becomes more careful about evaluating all the available alternatives. In this section we will present findings from a study carried out to test the prediction that when subjects are warned that their choice will be binding and irrevocable they will show more cautious decision making.

2. Method

In this experiment 79 subjects, all of whom were college coeds, participated in a study of art preferences. As payment for their work they were offered the opportunity to select a reproduction of an art masterpiece that they could take home.

Each subject was told that the study involved examining college students' knowledge about art and their preference for different styles of painting. The subject was given a set of 12 art prints, which included old masters, impressionists and moderns. She was asked to indicate her liking for each one on a series of rating scales. Then, while the subject was filling out the first part of a general knowledge questionnaire about art, the experimenter sorted through the ratings and located two prints that were equally preferred. On completing the questionnaire, the subject was shown a pair of prints and was told that for her help in the study she would later be given the one she preferred. The experimenter next introduced three variations, administered to equal numbers of subjects, which corresponded to signs of three different degrees of commitment:

1. Information about revocability: One group (N = 19) was told that after they made their decision they could change their minds after having the print at home for a few days, and return to exchange it if they wished to do so.

2. Information about irrevocability: A second group (N = 20) was told that once they announced their decision they would be asked to sign for the art print and, because the prints were in short supply, would be unable to change their minds.

3. Information about irrevocability with an added commitment to justify the choice: A third group (N = 20) was given the same information about irrevocability as the second group and then, in addition, was told that after they made their choice they would be asked to write a 200-word essay to justify it.

Several minutes after receiving the information, the subjects were again asked to rate the two prints according to how they felt about them currently. After that, they were informed that the time had come for them to announce their final choice between the two prints. The experimenter, with the aid of a concealed stopwatch, recorded the time each subject required to announce a decision. After the subject expressed the degree of certainty she felt about her choice, the experimenter gave the subject her chosen print and explained the purpose of the experiment. The research design also included a control group (N = 20) which was not given the opportunity to choose a print to take home, but was given the same rating and re-rating procedure to find out about their preferences.

Two main measures were used to ascertain the degree to which the subject was coping with conflict by making a hasty subjective choice and evaluating the alternatives in a biased way: (1) decision time, measured by the number of seconds between the end of the experimenter's question asking the subject to make a final choice and the subject's answer; (2) degree of predecisional bolstering of the most preferred choice (spread of alternatives), measured by the discrepancy between the initial ratings and the re-ratings obtained before the final decision was asked for.

3. Results

The results for all four experimental groups are shown in Table 4.

A. Decision time. Looking first at decision time, we note that it increased with degree of commitment ($p < .05$). Decision time was relatively short in the group that had been informed that their decision was revocable, almost doubled when the subjects were informed that their decision was irrevocable, and more than tripled when the subjects were informed that in addition to making an irrevocable decision, they would be asked to justify their choice. These findings indicate that the intensity of predecisional conflict depends, at least partly, on the information the decision maker receives about the extent to which he will be socially committed to adhere to and justify his choice.

TABLE 4

Differences in decision time and predecisional bolstering among subjects given different types of information about the degree to which they would be committed by their announced choice.

Condition	Decision Time in Seconds	Degree of Bolstering	% of group displaying bolstering
Revocable decision (N = 19)	7.0	1.11	58%
Irrevocable decision (N = 20)	13.1	1.40	70%
Irrevocable decision with commitment to justify it (N = 20)	24.9	0.70	30%
Control: (no choice) (N = 20)	--	0.25	30%

B. Predecisional bolstering. Turning next to the bolstering measure, we note that in comparison with the control group, a substantial amount of bolstering occurred among subjects who were faced with making a choice ($p < .05$). But among the three experimental groups there are differences which form a somewhat complicated pattern with the most highly committed group showing less bolstering than the other two ($p < .10$). Consistent with this pattern of differences, only 30% of subjects in the most highly committed group showed bolstering behavior, while in the other two groups twice as many subjects displayed bolstering behavior ($p < .05$).

Taking into consideration the fact that the choice was between two moderately attractive and inexpensive art prints, every subject knew that if she were to change her mind later on about the desirability of the print she chose, after hanging it in her room, she could always give it away or tear it up. If she then decided she wanted a different one, she could spend a little money to buy one she liked better. Thus, in view of the low cost of reversing the decision, the subjects would be unlikely to become highly concerned about postdecisional regret, whether the choice was irrevocable or revocable. These subjects would therefore be free to reduce their predecisional conflict by making a hasty choice and bolstering it. But for those subjects who were informed that they would be required to actively justify their irrevocable decision, some degree of postdecisional regret was likely to be anticipated since concern about being unable to defend one's decision could mobilize anticipatory regret about the possibility of humiliation and loss of self-esteem as a competent decision maker. Hence, the tendency to reduce the conflict rapidly by indulging in predecisional bolstering would be inhibited by the salience of potential regret for making an ill-considered decision.

This interpretation is consistent with the findings but, of course, we cannot rule out alternative interpretations that might also fit the data. The important point is that the results of this experiment make it appear plausible to assume that anticipatory regret about the consequences of committing oneself to a given choice will act as a deterrent to rapid closure and predecisional bolstering, even for minor decisions that do not entail any important positive or negative consequences. Like an earlier experiment by Mann, Janis and Chaplin (1969), this experiment contradicts the assumption by dissonance theorists (Festinger, 1964) that bolstering or spreading of alternatives never occurs during the period preceding the act of commitment. Rather, the experimental evidence points to specific conditions that determine whether or not predecisional bolstering will occur.

4. Summary and Conclusions

In summary, this study provides preliminary evidence that the predecisional thinking of decision makers is influenced by information about the actions to which they are committing themselves. The influence of commitment on time required to announce the choice was

quite straightforward. The more binding and consequential the commitment, the more hesitation in announcing the choice. But the effects on cognitive bolstering were more complicated, and are presumed to depend upon the salience of cues that arouse anticipation of postdecisional regret.

In reviewing the literature on the concept of commitment, McGuire (1966) concluded that this variable has ambiguous empirical status and is open to a variety of theoretical interpretations. It is debatable whether the essence of commitment is the irreversible quality of a choice, the public announcement of a position, or the holding of a preference which reflects on competence as a decision maker. We regard all three as different forms of commitment, since they entail anticipated utilitarian losses or anticipated social punishment for failing to pursue the various lines of action that others expect the individual to carry out after he has announced his decision. This experiment indicates that the anticipation of having to defend one's future choice, when added to an irrevocable commitment, operates as a strong deterrent to bolstering behavior during the predecision period. An irrevocable choice alone might make salient the possibility of postdecisional regret when the decisions are more ego-involving than the simple choice we investigated. Information about the irreversibility of a choice could alert the decision maker to the risks he will have to bear once he announces his decision and would incline him to seek additional information about potential losses. The expectation of having to justify his choice warns the decision maker that he must think about and remain aware of all the good reasons for the choice because later on he will have to articulate them rationally to others. Thus, somewhat different psychological processes may be evoked by different forms of commitment. Further studies along the lines of the present study, employing other types of decisions (including some that are much more ego-involving), should supply the missing evidence on the effects of different kinds of commitment on the salience and content of anticipated regret. Experimental studies carried out by the investigator with a sample of preschool children in the U.S. and Australia (Mann, 1971) reveal that even in young children, issuing a commiting warning initiates a psychological set to approach decision problems carefully and decisively.

Study 3. Stage of decision and information selectivity.

1. Introduction

An important problem in the psychology of decision making is the question of receptivity of the decision maker to information that favors or opposes a given course of action (cf. Freedman and Sears, 1965). Conflict theory assumes that the stage of the decision process at which a person is currently located is a major determinant of the degree of interest he will have in exposing himself to various kinds of decision-related information (Janis & Mann, 1968, Janis & Rausch, 1970).

This postulate about differential openness and receptivity to informational inputs is based on the assumption that different kinds of information help the individual to cope with problems and reinforce modes of conflict resolution characteristic of each stage of the decision process. One derivation is that the later the stage in the process, the less open the person will be to information that opposes his preferred course of action. For example, when high school students are offered a communication that contains negative information about their chosen college, less interest and more rejection would be expected among students who had already committed themselves to a school (Stage 4) than among those still contemplating the alternatives (Stages 2 or 3). The reverse would be predicted about information that provided support for the chosen alternative. Those students who had committed themselves to a college (Stage 4) would show more interest in supportive information than students at earlier stages.

A related derivation is that there is differential interest in utilitarian information which helps the individual cope with decision problems at each stage of the process. Thus information on social and extra curricular activities at the college might be ignored at Stage 2 or 3, when, for the first time, the student starts thinking about the viable alternatives, but will be attended to closely in Stage 4 or 5 after a definite decision has been made which must be implemented.

2. Method

The vehicle for testing the hypothesis about the relationship between decision stage and receptivity to information was the dilemma confronting Medford High School seniors over their choice between suitable colleges. At three different time periods during the decision process (one month before the decision, one week after the decision, and six weeks after the decision) students were told that information files containing facts about the academic atmosphere at over 1000 regionally accredited colleges abstracted from Handbooks, Guides and Profiles would be made available for perusal.

> "These facts have been gathered together in easy-to-read, convenient files and are extremely useful in helping students to select and prepare for college.

The files provide information about the sources and intensity of academic pressures, the capability and availability of the faculty, the background and concerns of the student body, the college's educational philosophy, comments - positive and critical - by students presently at the college, admission procedures and social activities."

Next, students read a brief description of each of the 8 files, and were asked to rank order them according to the level of interest they had in reading such files for the two leading colleges to which they had applied.

File 1. Background and concerns of the student body.
File 2. Sources & intensity of academic pressures; drop-out %, etc.
File 3. Positive comments about the college by students presently enrolled.
File 4. Negative comments & criticisms of the college by students presently enrolled.
File 5. Information about the faculty, their capability & availability.
File 6. The college's educational philosophy & attitude toward student radicals.
File 7. Admission requirements & policies for freshmen.
File 8. Social & extra-curricular activities, including sports, social life & dating.

In the predecision group (N = 13), students ranked the files approximately 4 weeks before they knew to which colleges they had been admitted (Stage 3 of the decision process). In the short term postdecision group (N = 28), students ranked the files approximately one week after they had received acceptance notices from their major colleges and shortly after they in turn had written to accept admission (Stage 4 of the decision process). In the long term postdecision group (N = 20), the files were ranked six weeks after students had written to accept admission in their chosen college (Stage 5 of the decision process).

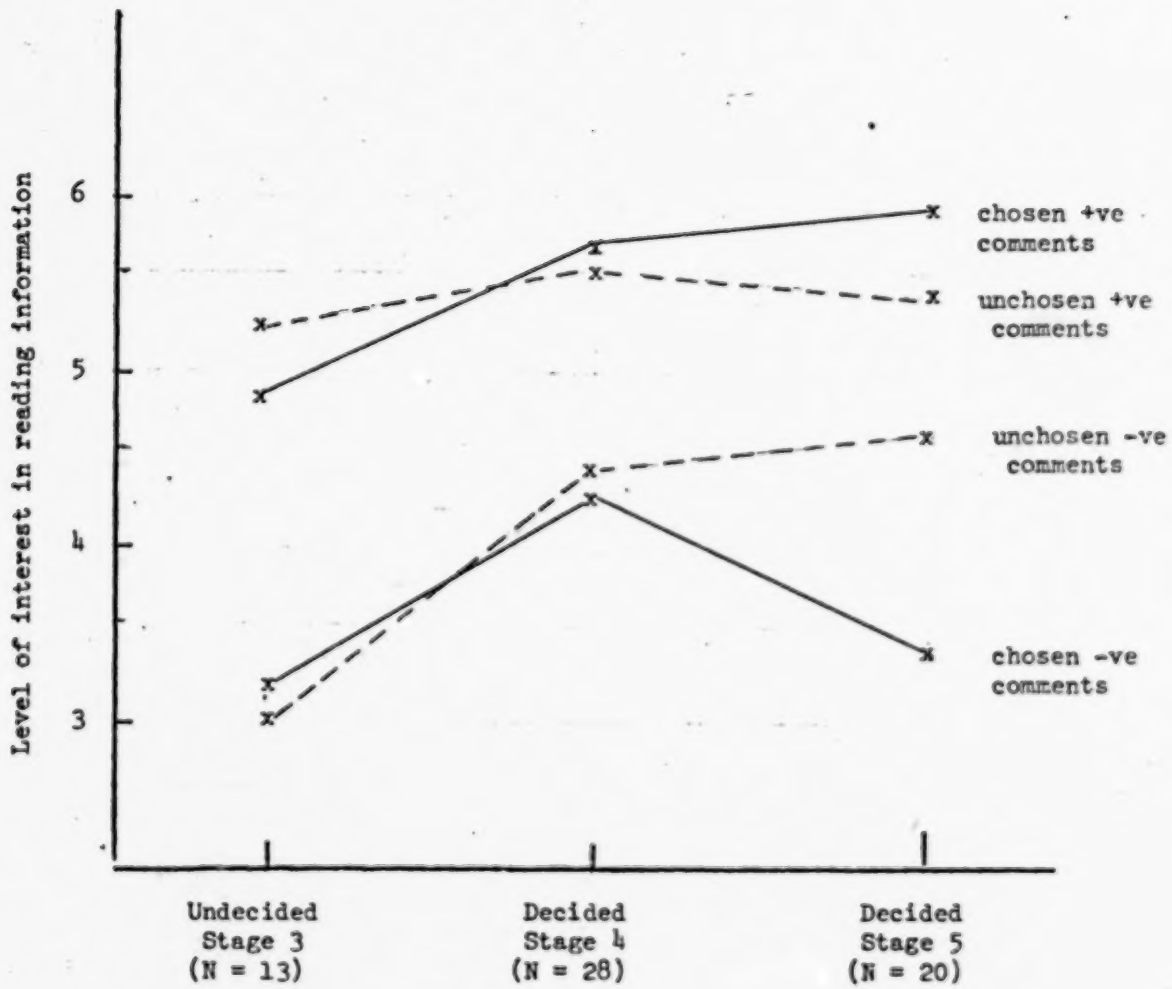
3. Results

A. Interest in supportive information. We predicted that before making a decision students would be equally interested in reducing positive and negative comments about the choice alternatives; but after the decision, greater interest would be shown in reading positive comments about the chosen college and negative comments about the unchosen colleges, information which bolsters the decision.

Figure 1 depicts the level of interest in reading supportive and nonsupportive information about the two leading choice alternatives at each of 3 crucial stages of the decision process. From Figure 1 it appears that

FIGURE 1

Preferences for supportive and nonsupportive information at three different stages of the decision about college.



1) across all 3 stages of the process, students were more interested in reading positive comments about colleges to which they had applied than negative comments.

2) consistent with the hypothesis, before the decision, i.e., at Stage 3, students were equally interested in getting positive comments about their preferred and less preferred alternatives, and equally interested in receiving negative comments about the two alternatives.

3) counter to the hypothesis, shortly after the decision, i.e., at Stage 4, students were also equally interested in hearing positive comments about the chosen and unchosen colleges, and equally interested in receiving negative comments about the choice alternatives. The only difference between information preferences at Stages 3 and 4 was that in the latter stage, unexpectedly, there was an increase in interest in negative comments about the two leading choice alternatives ($p < .05$).

4) consistent with the hypothesis, at Stage 5, greater interest was shown in reading positive comments about the chosen college (5.9) than the unchosen (5.4; $p < .10$); and greater interest was expressed in reading negative comments about the unchosen college (4.6) than the chosen (3.3; $p < .05$).

In sum, the overall pattern of information preferences across stages (with the notable exception of Stage 4) supports the hypothesis that before making a decision the student is equally receptive to positive and negative information about the leading choice alternatives, but after a choice has been made, is selectively interested in supportive, bolstering information. The decision maker is unbiased in his information preferences during the predecision phase because it would be premature to bolster the preferred school before he knows where he has been admitted. Unbiased openness to informational inputs in the days immediately following the decision may reflect a high level of confidence, which makes it unnecessary to bolster the decision by information selectivity. In the weeks that follow, initial certainty may give way to a period of self doubt which requires for its alleviation the usual quest for supportive information. This explanation of the findings is, of course, speculative and must remain tentative until further research on this type of major personal decision reveals similar patterns of information selectivity.

B. Interest in utilitarian information. One can sometimes gain an overall picture of a college by considering facts about its faculty, student body, educational philosophy, admission requirements and policies, academic pressures and extra curricular activities.

At three crucial period during their decision about college, students were asked which of the different facts about college they were most interested in reading about.

Table 5 presents the mean interest level for each aspect by time period. To summarize Table 5, the following interest patterns prevail during the decision process.

1. Decrease in interest for information about faculty and college philosophy.

   At the outset, in the predecision phase, interest in learning about faculty capability and availability was very high, but dropped off considerably at the time of the two postdecision measures. Interest in the college's educational philosophy, which was moderate to start off with, also decreased as a function of time.

2. Increase in interest for information about admission requirements and extra-curricular activities.

   Interest in admission requirements and policies for freshmen was quite high at the outset, and tended to go up marginally after the decision. Similarly, interest in social and extra curricular activities, which was understandably, low at the outset, increased after the admission to college, when presumably, students started preparing themselves psychologically for implementing their decision.

3. No change in interest for facts about student body.

   Throughout the decision process, interest in reading about background and concerns of the student body remained at a fairly moderate level. No systematic changes in interest level were apparent.

4. An increase followed by a decrease in interest for information about academic pressures.

   Immediately after the decision there was an upsurge in interest for information dealing with sources and intensity of academic pressures; six weeks after the decision was made, interest in sources of academic pressures reverted to a fairly low level. Perhaps shortly after making their decision students became concerned for a brief period of time, about the stresses and strains of college life. About this time one of our subjects, a female student, made the following comment, "I wonder if I'm capable of going to college directly from high school." After accepting admission to the college of choice, the student is for the first time free to shift his attention from the problem of selecting between alternatives, to the problem of making the most of his chosen alternative. This remark we have just quoted might reflect this kind of concern.

TABLE 5

Mean interest level in reading information files about the preferred or chosen college at three different stages of the decision.

	Undecided Stage 3 (N = 13)	Decided Stage 4 (N = 28)	Decided Stage 5 (N = 20)
Background and concerns of student body	4.9	4.7	4.7
Sources and intensity of academic pressures	4.0	4.7	3.6
Faculty capability and availability	6.5	5.0	5.2
College's educational philosophy	4.4	4.0	3.0
Admission requirements, policies for freshmen	5.2	5.3	5.6
Social and extra curricular activities	3.1	4.5	4.5

4. Summary and Conclusions

Overall, the results of this study tend to support the assumption from conflict theory that there is a differential openness to information at each stage of the decision process. Some kinds of information were regarded as relatively unimportant, even trivial early on in the process, when concern was focussed on comparing choice alternatives. At other times for example, after the decision when implementation was the prime concern, other kinds of information emerged as more viable.

Thus, the quality of faculty, a most relevant consideration before the decision was made, tapered off in interest later in the process, but social and extra curricular activities, a fairly minor consideration in selecting a college, emerged as quite important after acceptance of admission to college. This study shows quite clearly that information selectivity and preference for supportive information which bolsters a decision is a function of the stage of the decision process at which the student is located.

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Appendix 1

Studies in Decision Making

Interview Schedule
for
Balance Sheet Procedure

Part I - Introduction (to be paraphrased, not read)

1) I guess the first thing is to give you some idea of what we are going to try to do. We are trying to gather some information about the ways in which people go about making important decisions. One way to do this is simply to talk to people about actual decisions which they are currently thinking about. Briefly, what we'd like to do here today is talk about your plans for next year - how you came to these decisions.

2) All we want is some information about your thinking. We hope that you will just sort of talk spontaneously about your decisional considerations. We intend to ask you a few general questions and, then, to explore some of the detailed considerations with you.

3) Would you object to my tape-recording our conversation? Good.

Now, from our brief experience with this study, we have learned that it is helpful to begin by finding out how far you have come toward making a decision about next year. So, we have devised some general classifications that we call "stages" which seem to help people tell us how far along they are. First, I'll describe each of these four stages of decision making, and then I'll ask you to indicate which one applies to you and the reasons for your choice. O.K.?

Stage I would apply to you if you haven't thought at all about next year - that is, if you haven't really considered any possible plans.

Stage II applies if you have done some thinking about one or more possible colleges, but you haven't really picked one as more attractive or as the one you will attend.

Stage III involves having already selected one school as the best, but not having committed yourself to it. In other words, you think that it is the best one, but you haven't done anything about it yet that would stand in the way of changing your mind if you wanted to.

Appendix 1

Finally, Stage IV; here you have picked one school and have in some way committed yourself to it. For example, if you have announced your decision to your family or friends, or sent a letter of acceptance to the school, you would be in Stage IV.

So, to summarize these stages of decision making: if you haven't begun thinking about it, you are in Stage I; if you have begun thinking, but haven't made up your mind, you are in Stage II; if you have tentatively made up your mind, you are in Stage III; if you have committed yourself to a decision so that it is fairly well settled, you are in Stage IV.

1) O.K., now which one do you think applies to you?
   a) Can you tell me why?
   b) When would you say you arrived at this stage?
   c) How did you arrive at this stage?
   d) Can you describe to me your previous stages; that is, how do the other stages seem applicable to you, if at all?

2) Fine. Now, would you tell me (more about) how your plans for next year are shaping up and how the whole issue of your future college career looks to you at present?

3) O.K. (You have already mentioned some of the alternative schools that you have considered, but) could you now list all the alternative schools which you have seriously considered at one time or another in recent months?

   (You have already started to cover this, but I need to be a bit more sure of it, so) would you now rank each of these schools in terms of which seems to be the best one for you, as you see it right now? (Which would be your 2nd choice? 3rd?, etc.?)

4) Have you tried to get information about any of these schools? Which schools? What kinds of information? Have you talked to anyone about these schools? (To whom?) When did you get this information? (If Stage IV, "Have you talked to anyone or obtained more information since you committed yourself? What kind?")

5) Now I would like to ask you to focus on the 1st two alternatives: _____ and _____. What are the various positive and negative points - that is, pros and cons - of each of these two alternatives? (You have already mentioned several, but I'm not sure that I have a very complete picture of this aspect of your thinking.)

   Let's start with your 1st choice, _____. Would you try to think of all the possible arguments or considerations in favor of or against this school? Can you think of anything else? Anything else?

Appendix 1

Now let's go on to your 2nd choice, _____ . What are the various pros and cons for this choice? Can you think of anything else? Anything else?

6) You've gone thru some of your alternatives and their pros and cons. What I'd like to do now is to go thru the possible considerations in a more systematic way. The considerations which go into a decision may be divided into four different kinds or types:
   a) Utilitarian considerations: gains and losses for yourself (e.g., scholarships, the faculty, courses, environment - physical and social, etc.).
   b) Utilitarian considerations: gains and losses for others (e.g., cost to parents, status for family, distance from home, etc.)
   c) Approval or disapproval by others, which includes being criticized and being excluded from a group, as well as being praised or obtaining prestige, admiration and respect (from parents, friends or community).
   d) Self-approval or disapproval (i.e., extent to which considerations meet one's ethical values and affect one's sense of self-esteem).

   What I'd like you to do is to place each of the pros and cons you just mentioned, and others you might think of, under one of these headings. Here's a chart that you can use. First, let's do your first choice, _____ . Finished? Now your second choice, _____ .

   Fine. Now, all of these are things you might consider in deciding on which school to go to. But when it comes down to making a choice, some considerations are more important to you than others. What I'd like you to do now is to go back over the charts and put a number between 1 and 5 next to each consideration according to how important that consideration is to you. A five (5) would mean it is very important, while a one (1) means it is of little or no importance to you. O.K.?

7) (IF NOT AT STAGE IV) Good! Now, suppose you had to make up your mind to act on a final decision today - to commit yourself to a final decision right now. What would you think about and what would you do? What I want here is for you to talk about all your thoughts that would go into making this final decision at the point where you had to act on it and commit yourself to it.

   (IF AT STAGE IV) Good! Now, I would like you to tell me how you finally reached a decision. What were the thoughts that went into making this final decision? How did you finally decide for one alternative over the others?

Appendix 2

Name: _____

Plans for College Inventory II

1. Which college will you be attending next year?
(Or, what will you be doing next year?) _____

2. How difficult was it for you to decide on the college you will be attending next year?

(a) _____ not at all difficult

(b) _____ slightly difficult

(c) _____ moderately difficult

(d) _____ very difficult

(e) _____ extremely difficult

3. Please list the reasons for choosing _____ as the college you will attend:
(give name)

a. _____

b. _____

c. _____

any other reasons?

_____

4. Since making your decision have you experienced any regret or concern that you may have made the wrong choice of college?

(a) _____ no regret whatsoever

(b) _____ a small amount of regret

(c) _____ a great deal of regret

(If you answer b, or c, please explain what produced the feeling of regret): _____

_____

Appendix 2

5. How much time have you spent during the past month thinking about college (career) plans?

   (a) _____ very rarely on mind

   (b) _____ an occasional consideration

   (c) _____ thought about with some regularity

   (d) _____ frequently discussed and thought about

   (e) _____ source of great concern

6. How happy are you with your plans for college (or career)?

   (a) _____ unhappy

   (b) _____ prospects unpleasant, but endurable

   (c) _____ unexcited about plans

   (d) _____ general satisfaction

   (e) _____ eager anticipation

7. How important is it for you to be admitted to a good, reputable college following graduation from High School?

   (a) _____ unimportant

   (b) _____ of little importance

   (c) _____ moderately important

   (d) _____ significantly important

   (e) _____ extremely important

Appendix 3

Who are the regrettors?

Altogether, 30 percent of the 30 students in the experiment sample administered the predecisional balance sheet procedure in Study 1 expressed some postdecisional regret or concern over their choice of college. Who were the regrettors, and why were they regretful? The answer to this question may help reveal individual differences between students which underlie the tendency to make unstable decisions relating to college.

The source of regret.

Students who reported regret or concern that they may have made the wrong choice of college frequently asserted that this feeling occurred when they first started thinking what life would be like at their chosen college. In most cases, these were students who applied to only two schools, and therefore had only a limited choice when accepted. One girl, who chose a college because of its closeness to home asserted: "I have now discovered school requirements I may have trouble filling." Students who allowed one or two considerations to override all others also reported feeling uncertainty about the wisdom of their choice: "I now wonder if the school has what I need"; and "I wonder if I should have considered going to a school further away from home." In most cases, the problem of decisional instability may have been caused by failure to scan the relevant information in a realistic way before accepting admission to a college.

Personality differences.

An examination of scores on the Decision Strategy Inventory (DSI) and on the Rotter (1966) I-E Scale reveals that in comparison with students secure in their decision, regrettors are more likely to be people who are (1) easily influenced by others, (2) have low tolerance for information search, (3) feel uncomfortable about making decisions and (4) feel they have little control over their own fate.

The Decision Strategy Inventory is a 6-item test constructed as part of the research project. It is concerned with preferred ways of making decisions, and requires the respondent to indicate on a series of 5-point scales how frequently he follows various modes for making decisions. Here are the 6 items:

1. When making a decision do you wait until you have carefully considered all relevant information?

2. How do you feel about making decisions when the available information is not enough to be certain?

3. When someone tries to pressure you into choosing a particular course of action do you tend to go along with what he wants?

4. How do you feel about making decisions which might affect your future for many years?

Appendix 3

5. In making personal decisions, do you prefer to decide alone rather than follow the advice of other people?

6. When you tell others about a decision you have just made, do you tend to stick to it even when it arouses strong criticism and negative comments?

The DSI was administered at a session in mid-March several weeks before students had to decide about their college for the year after graduation. Responses to the Inventory revealed that the 6 items belong together as a scale which measures something akin to independent, deliberate decision making. High scores on the scale characterize a person who (a) prefers to consider all relevant information and dislikes decisions where there is insufficient information to be certain; (b) feels comfortable about making important decisions and prefers to decide alone; and (c) resists social pressure to choose a particular course of action and tends to stick by a decision even when it arouses strong criticism.

While only 20 percent (2/10) regrettors scored above the median on the Decision Strategy Inventory, 64 percent (14/22) of non-regrettors scored above the median on this scale. The difference in percentages is highly significant ($p < .05$). Conversely, while the large majority of regrettors (78 percent or 7/9) scored above the median on Rotter's I-E Scale (which measures perceived lack of control over one's own fate), a majority of non-regrettors (43 percent or 12/28) were above the median on this scale ($p < .05$).

In sum, the person who was more likely to experience regret following a decision about college was one who had failed to consider and take account of all relevant information before making a choice. The strong relationship between preference for immature modes of decision making and regret, and between low fate control and regret suggests that the mediating variable might be the predisposition to avoid careful information search and to suppress independent judgment.